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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,344	07/19/2001	Donald R. Brewer	DFOSS.0101	9632

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EXAMINER
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MISKA, VIT W

ART UNIT	PAPER NUMBER
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2841

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/909,344

Applicant(s)

BREWER ET AL.

Examiner

Vit W. Miska

Art Unit

2841

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 1/27/2005, 2/28/2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-6, 8, 10, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Freeman et al in view of Comiskey et al ('578). The Freeman et al patent discloses a timepiece module (col. 1, line 17 and col. 5, lines 17-18) including power source 14, timer incorporated in microprocessor 40 for displaying stopwatch and current time (col. 5, lines 17-18), driver 42, controller 40 having an output as shown in Fig. 3, flexible bi-stable display 12 (col. 3, lines 21ff), voltage source 14 (battery). The reference further suggests that other displays may be used at col. 3, line 56, including suspended particle displays and light emitting polymer displays. Comiskey et al discloses the use of an encapsulated flexible electrophoretic display (col. 7, line 18) in a variety of applications, including a suggestion of use in a watch (col. 19, line 19).

2. With respect to the display, the Freeman et al patent does not disclose details of the manner of switching power to the display, other than to indicate that the bi-stable display will maintain an image when power is removed (col. 3, lines 34-35). One of ordinary skill in the art will recognize that the bi-stable display by definition need not be powered continuously. In view of the fact that Freeman discloses use of a flexible display in a timepiece, and further suggests that such a display may be of the suspended particle type, one of ordinary skill in the art would be motivated to implement details of such an embodiment using known technology.

3. Comiskey et al further describes bi-stable displays which are stable for hours or days (col. 2, lines 42-43), language which is almost identical to that in applicant's specification (p. 3, lines 16ff). One of ordinary skill in the art having both references would thus be taught to power the display of Freeman et al as implemented with Comiskey et al periodically, or less than sixty times a minute by using the bi-stable display suggested or any of the other bi-stable displays suggested in Comiskey et al as a means for conserving power (see col. 18, lines 34ff). The specific refresh rate would be selected to correspond with the frequency of data updates to the display.

4. A voltage step up circuit is not specifically mentioned in Freeman et al, however, driver circuit 42 "develops the voltages appropriate to activate and deactivate the

display pixels" (col. 3, lines 60-62). Further, Comiskey et al suggests use of a specific type high voltage driver at col. 18, lines 5ff made by Supertex, the same manufacturer for the driver chip mentioned by applicant at page 12, line 2. Drivers of this type provide a stepped up voltage from a power source or input voltage. Thus, one skilled in the art would be familiar with the manner of driving the display elements mentioned in Freeman et al or Comiskey et al and provide a step-up circuit for the power source for producing the necessary voltages to activate the bi-stable display.

5. With respect to claim 6, Freeman et al suggests the use of "suspended particle displays" at col. 3, line 56. Thus, an electrophoretic display, being a specific type of such display, would be obvious for use therein as described in detail in Comiskey et al.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Freeman et al and Comiskey et al as applied to claim 1 above, and further in view of Simoni et al. The latter reference teaches use of a gyricon display as a bi-stable type display (col. 3, lines 60ff) for use in a flexible display environment (col. 4, lines 12 and 18) and refers to the Comiskey et al display as suitable for use therein (col. 3, lines 3ff and col. 4 line 10). Thus, one of ordinary skill in the art having the three references would have a suggestion of using the gyricon display of Simoni et al in Freeman et al as a type of suspended particle display suggested by therein.

7. Claims 9, 11-14, 20-24, 26-29, 31, and 33-36 are rejected under 35

U.S.C. 103(a) as being unpatentable over Freeman et al and Comiskey et al as applied to claim 1 above, and further in view of Brewer ('185). Regarding claims 9, 11-14, and 33-36, the specific display effects are not described in Freeman et al. However, Brewer et al teaches production of various display patterns and effects in a timepiece by varying color and display patterns. The patterns are varied at a selected rate (col. 5, line 40) or manually (col. 9, line 6). One of ordinary skill in the art having these references would thus be taught that the display in Freeman et al may be inverted or color-reversed as described in Brewer et al. With regard to claims 33, an alarm is not specifically mentioned in Brewer et al. However, the patentee suggests at col. 5, lines 38-41 that the display change between two colors at a user selected rate. Thus, a timer using an "alarm" for this purpose would obviously be necessary to activate the display drivers at the appropriate alarm times.

8. With respect to claims 20-22, 26-29 and 31, Brewer suggests illuminating the display by means of an EL display (col. 10, line 19). It would thus be obvious for one skilled in the art to provide a back light for the display in Freeman et al as taught by Brewer et al to facilitate reading the display in the dark. Regarding claims 23-24, Brewer further teaches plural colors for the display which would be obvious for one skilled in the art to incorporate in the Freeman device to provide color variation thereto.

9. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Freeman et al and Comiskey et al as applied to claim 15 above, and further in view of Kamiyama et al. The latter reference teaches the use of solar, mechanical or thermal power source in a timepiece. One of ordinary skill in the art would thus be taught to use any of these conventional power sources as the voltage source in Freeman et al as an obvious choice of available technology.

10. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Freeman et al and Comiskey et al, as applied to claim 1, above, in further view of Lee. The Lee patent discloses a display driver having a series of cascading diodes in Figs. 2 and 3 included in a voltage step up circuit for an EL display. One of ordinary skill in the art would be taught to provide such a circuit to power the display of Comiskey et al, as further suggested at col. 17, lines 36-39 of Comiskey et al.

11. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Freeman et al, Comiskey et al and Brewer ('185), as applied to claim 26, in further view of Lee. The step up circuit disclosed in the Jenkins et al reference would be an obvious choice and suitable for use in Comiskey et al, as noted in the preceding paragraph.

12. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Freeman et al, Comiskey et al and Simoni et al as applied to claim 7 above, and further in view of Brewer et al ('185). Provision of a light source for the gyricon display of Simoni et al would be obvious to one skilled in the art as a means for assisting viewing the display in the dark, as noted above.

### ***Response to Applicant's Arguments***

13. Applicant argues that Freeman does not teach a voltage step-up circuit between the power source and the display. While this is true with regard to the LCD display suggested at col. 3, lines 32ff, patentee suggests other displays requiring higher power sources at col. 3, lines 55ff, as noted above. Although the preferred embodiment does not contemplate a voltage step up circuit for the LCD display, one skilled in the art attempting to construct a timepiece with the suggested electrophoretic display would obviously be aware of the higher voltage requirements thereof. The Comiskey et al display being one of the suggested display types, requires a higher voltage than the



conventional 3V power supply in small electronic devices, such as timepieces. The latter references further teaches the use of such stepped up voltages to drive the display, as noted above. Thus, one of ordinary skill in the art having the suggestion in Freeman of using electrophoretic displays would employ the teaching of Comiskey et al to provide such display with an appropriate voltage supply circuitry and step up circuit.

Applicant acknowledges the teaching of Comiskey et al :

"On the other hand, while the Comiskey et al. '578 patent teaches the use of high voltage CMOS display drive circuitry, such as the Supertex Comoration HV57708PG, to drive its electrophoretic displays, it does not appear to teach the inclusion of a voltage step-up circuit element coupled between the power source and the control unit as taught in the present invention." (Page 8 of "Remarks").

The argument that even though a high voltage circuit for driving the display is taught is Comiskey et al, the inclusion of such a circuit between the power source and the control unit is not suggested lacks merit in view of the suggestion of several embodiments of the disclosed invention in portable devices, such as watches, as noted above. It is apparent that a high voltage driver would be powered by a suitable voltage source, or "power source", as claimed.

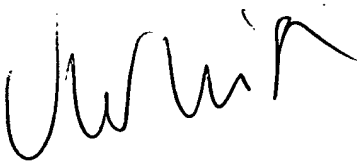
**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vit W. Miska whose telephone number is 571-272-2108. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, K. Cuneo can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**Vit Miska**  
**Primary Examiner**

VM  
5/12/2005